REMARKS/ARGUMENTS

Claims 1-32 have been resubmitted. Claims 1, 8, 12, 18, 20, 24 and 27 have been amended. Claim 33 has been canceled. No claims have been added.

Claims 1-4, 7-9, 11, 13, 14, 18, 20, 21, 27, 28, 30, 32 and 33 have been rejected under 35 U.S.C. §102(b) as being anticipated by Linzer et al. (U.S. Patent No. 4,811,783). Claims 5, 6, 16, 17, 22, 23 and 29 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Linzer et al. in view of Stein et al. (U.S. Patent No. 3,785,435). Claims 10, 19, 25 and 31 have also been rejected under 35 U.S.C. §103(a) as being unpatentable over Linzer et al. in view of Hackemesser et al. (U.S. Patent No. 4,127,389). Claim 15 has also been rejected under 35 U.S.C. §103(a) as being unpatentable over Linzer et al. in view of Satake et al. (U.S. Patent No. 4,886,871)

Claim 26 has been allowed. Claims 12 and 24 were objected to as being dependent upon a rejected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Examiner Interview

On Thursday, December 16, 2004, Applicants' Representative conducted a telephone interview with Examiner Theresa Weinberg. Applicants' Representative appreciates Examiner Weinberg's time and willingness to discuss the case and proposed amendments to the claims. With respect to the rejection under 35 U.S.C. §102(b) over the Linzer reference, Applicants' brought to Examiner Weinberg's attention that Claims 8, 18 and 20 included the limitation of "said first set of tubes having a diameter larger than said second set

of tubes" and that this limitation was not found in the Linzer reference. Examiner Weinberg agreed to withdraw the rejection of Claims 8, 18 and 20 with respect to the §102b rejection. Examiner Weinberg further requested that Claims 8, 18 and 20 be amended such that is was clear that the diameter referred to was that of the individual tubes. Applicants' also pointed out that Claims 11, 13 and 20 had the limitation of a gap in the longitudinal direction of the thermal buffer members and that this limitation is not found in the Linzer reference. The Examiner agreed to review the reference further with regard to this argument. With respect to the rejection of independent Claims 1 and 13, Applicants' discussed possible amendments that would overcome the rejections. Examiner Weinberg acknowledged that adding a limitation of the solid buffer members having a larger diameter than the plurality of tubes could overcome the current rejections. These points are addressed in more detail below.

Linzer et al. (U.S. Patent No. 4,811,783)

The Linzer reference discloses a heat exchanger having a plurality of heat transfer tubes with a circumferential row of cylindrical members surrounding the plurality of heat transfer tubes to prevent solid debris from reaching the heat transfer tubes. The cylindrical members have the same outside diameter, pitch and geometric array as the heat transfer tubes. The Linzer reference teaches that having cylindrical members and heat transfer tubes with the same diameter, pitch and geometric array is important so that the pressure drop of a fluid moving across the members and tubes is negligible. See column 3, lines 56-68.

The Examiner has rejected Claims 1-4, 7-9, 11, 13, 14, 18, 20, 21, 27, 28, 30, 32 and 33 under 35 U.S.C. §102(b) as being anticipated by the Linzer reference. To anticipate a claim under 35 U.S.C. § 102, a single source

must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

The heat exchanger of Claims 8, 18 and 20 has a first set and a second set of tubes where the first set of tubes has a diameter larger than the second set of tubes. In contrast, the heat transfer tubes and the cylindrical members of the heat exchanger of the Linzer reference have the same diameter, pitch and geometric array. In fact the Linzer reference teaches away from having heat transfer tubes with different diameters. Thus the Linzer reference does not disclose all the claimed elements of Claim 8 and dependent Claim 9, Claim 18 or Claim 20 and dependent Claims 21-25, nor does it teach or suggest the claimed heat exchanger having tubes with different diameters. Withdrawal of the §102(b) of Claims 8-9, 18 and 20-21 is respectfully requested.

The Examiner has requested that Claims 8, 18 and 20 be amended however, to reflect that it is the diameter of the individual tubes of the first set of tubes that has a greater diameter than the individual tubes of the second set of tubes. Applicants submit that upon reading the specification and viewing the drawings that it would be clear to the skilled artisan that the diameter referred to in the claims is the diameter of the individual tubes. However, in an effort to expedite prosecution of this case, Applicants have amended Claims 8, 18 and 20 to read "wherein each tube of said first set of tubes has a diameter larger than each tube of said second set of tubes." Basis for the amendment may be found throughout the specification and drawings, specifically paragraph 24 on page 7 and Figure 2.

Furthermore, in an effort to expedite prosecution of this case, while not conceding to the validity of the rejections, Applicants have amended independent Claims 1 and 27 to include the limitation of "said thermal buffer members having a diameter greater than said plurality of tubes." Basis for the amendment may be found in the specification and drawings, specifically Figure 2 and paragraph 36, page 13. As discussed above, the Linzer reference discloses cylindrical members having the same diameter, pitch and geometric array as the heat transfer tubes. Therefore the Linzer reference does not disclose all the elements of amended Claims 1 and 27 as well as dependent Claims 2-4, 7-9, 11, 28, 30 and 32. Withdrawal of the §102(b) rejection is therefore respectfully requested.

The heat exchanger of Claims 11, 13 and 20 comprises "a gap in a longitudinal direction of said solid thermal buffer members, located either within said thermal buffer members, thereby creating two thermal buffer members along said longitudinal direction separated by said gap, or at an end of said thermal buffer members, between said thermal buffer members and said heat exchanger, said gap being sufficient size to allow for thermal expansion of said thermal buffer members without exerting stress on said heat exchanger...." Furthermore, the claimed heat exchanger of the present invention further comprises a second fluid that moves around the exterior of the thermal buffer members before the second fluid reaches the tubes. Therefore, whether the gap is located within the thermal buffer members as illustrated in Figure 3 or at an end of the thermal buffer members, the gap is still in the flow path of the second fluid. In contrast, the cylindrical members of the Linzer reference function as "an almost indestructable screen against impacting pieces of metallic debris swept along by the fluid flowing within the annular downcomer passage." Column 4, lines 1-4. Therefore, a gap along the cylindrical members of the Linzer reference would negate their purpose.

Applicants thus submit that the Linzer reference does not teach or disclose the heat exchanger of Claim 11, Claim 13 and dependent Claims 14-19 nor Claim 20 and dependent Claims 21-25, specifically a heat exchanger having a gap for thermal expansion in a longitudinal direction. Withdrawal of the §102(b) rejection of Claims 11, 13, 14, 18 and 20-21 is therefore respectfully requested.

Stein et al. (U.S. Patent No. 3,785,435)

The Stein reference discloses a heat exchanger having a series of annular discs which define a central flow path for hot gas discharge from an engine. The heat exchanger also has adjacent plates defining radial flow paths for the hot gas discharge.

Claims 5, 6, 16-17, 22-23 and 29 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Linzer reference in view of the Stein reference.

As discussed above, the Linzer reference does not teach or suggest the heat exchanger of Claim 20 and dependent Claims 22-23 with a first set of tubes having a diameter greater than a second set of tubes. Nor does the Linzer reference teach or suggest the heat exchanger of Claim 13 and dependent Claims 16-17 having thermal buffer members with a gap for thermal expansion. Finally, the Linzer reference does not teach or suggest the heat exchanger of amended Claims 1 and 27 and dependent Claims 5,6 and 29 having thermal buffer members with a diameter great than a plurality of tubes. The Stein reference also fails to teach or suggest a heat exchanger with any of the above elements. As a result, the Stein reference fails to correct this deficiency in the disclosure of the Linzer reference. Applicants thus submit that Claims 5, 6, 16-17, 22-23 and 29 are not obvious over the Linzer reference in

view of the Stein reference and respectfully request withdrawal of the §103(a) rejection.

Hackemesser et al. (U.S. Patent No. 4,127,389)

The Hackemesser reference discloses an exchanger reactor for heating and chemically reacting a solution flowing through tubes containing a catalyst. The exchanger reactor has a tube bundle assembly mounted in and separate from a shell assembly.

Claims 10, 19, 25 and 31 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Linzer reference in view of the Hackemesser reference.

As discussed above, the Linzer reference does not teach or suggest the heat exchanger of Claim 20 and thus dependent Claim 25 with a first set of tubes having a diameter greater than a second set of tubes. Nor does the Linzer reference teach or suggest the heat exchanger of Claim 13 and thus dependent Claim 19 having thermal buffer members with a gap for thermal expansion. Finally, the Linzer reference does not teach or suggest the heat exchanger of amended Claims 1 and 27 and thus dependent Claims 10 and 31 having thermal buffer members with a diameter great than a plurality of tubes. The Hackemesser reference also fails to teach or suggest a heat exchanger with any of the above elements. As a result, the Hackemesser reference fails to correct this deficiency in the disclosure of the Linzer reference. Applicants thus submit that Claims 10, 19, 25 and 31 are not obvious over the Linzer reference in view of the Hackemesser reference and respectfully request withdrawal of the §103(a) rejection.

Satake et al. (U.S. Patent No. 4,886,871)

The Satake reference discloses melt-stable poly(arylene thioetherketone) and a production process to make the compound.

Claim 15 has been rejected under 35 U.S.C. 103(a) as being unpatentable over the Linzer reference in view of the Satake reference.

As discussed above, the Linzer reference does not teach or suggest the heat exchanger of Claim 13 and thus dependent Claim 15 having thermal buffer members with a gap for thermal expansion. The Satake reference also fails to teach or suggest a heat exchanger with any of the above elements. As a result, the Satake reference fails to correct this deficiency in the disclosure of the Linzer reference. Applicants thus submit that Claim 15 is not obvious over the Linzer reference in view of the Satake reference and respectfully request withdrawal of the §103(a) rejection.

Objection of Claims 12 and 24

Claims 12 and 24 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. Claims 12 and 24 have been amended to include the limitations of independent Claims 13 and 20, respectively. Withdrawal of the rejection is respectfully requested.

CONCLUSION

Applicants would like to thank Examiner Weinberg for the telephone interview of December 16, 2004. In such interview, the Examiner reviewed the arguments regarding Claims 8, 11, 13, 18 and 20 and discussed the above

amendments to Claims 1 and 27. Examiner Weinberg approved the same as overcoming the rejections of Claims 1, 8, 11, 18, 20 and 27 in the October 28, 2004 Office Action. Examiner Weinberg agreed to further review the rejection of Claims 11 and 13 in view of Applicants' argument.

Reconsideration and withdrawal of the Office Action with respect to Claim 1-32 is requested.

In the event the examiner wishes to discuss any aspect of this response, please contact the attorney at the telephone number identified below.

Respectfully submitted,

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